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PRELIMINARY AMENDMENT Address to: Box Patent Application Assistant Commissioner for Patents Washington, D.C. 20231	Attorney Docket	GUID-003CON3
	First Named	Charles S. Taylor
	Application Number	Unassigned (Continuation of 09/440,106, filed on November 15, 1999)
	Filing Date	Herewith (December 14, 2001)
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Title: *Surgical Devices for Imposing a Negative Pressure to Stabilize Cardiac Tissue During Surgery*	

Sir:

Prior to examination, please amend the application as follows:

IN THE SPECIFICATION

On page 1, after the title, please insert the following new paragraph:

(New) This application is a continuation of co-pending Application Serial No. 09/440,106, filed on November 15, 1999, which is a divisional of Application Serial No. 08/870,687 filed on June 6, 1997 (now U.S. Patent No. 6,032,672), which is a divisional of Application Serial No. 08/603,328 filed on February 20, 1996 (now U.S. Patent No. 5,727,569). The priority of these applications is expressly claimed and the disclosure of the applications are hereby incorporated by reference in their entireties.

Please amend the paragraph beginning on page 5, line 1 as follows:

(Amended) and is applied at several points over the surface of the heart proximate to or surrounding the portion of the heart whose position is desired to be fixed during the procedure. The instruments feature several suction ports which are brought into contact with the heart, followed by the application of a negative pressure through the instrument, to fix the position of the tissue based on the placement of the instrument. The instruments may also contain a sealed, airtight pressure conducting chamber for operably connecting to a pressure inlet for communicating the negative pressure to the suction ports. Alternatively, each suction port may have a dedicated vacuum line attached thereto.

Please amend the paragraph beginning on page 9, line 2 as follows:

(Amended) Referring to Figure 2, a dome-shaped or semi-spherical embodiment of the invention has a plurality of suction ports 2 spaced about the periphery of the bottom surface 6 of the dome portion 8 such that the entire instrument is fixed to the cardiac tissue at the point of each of the several suction ports 2. As with the above embodiment, it is preferred that each suction port 2 be pneumatically connected via an air-tight pressure conducting chamber 4. The base of the instrument is comprised of a substantially flat bottom surface 6 wherein the opening of each of the suction ports 2 is flush at the bottom surface 6. The bottom surface 6 is preferably substantially flat because the bottom surface 6 will engage the surface of the heart when the negative pressure is imposed. Alternatively, depending on the size of the instrument and the location of placement on the surface of the heart, the bottom surface 6 may be contoured so that the suction ports 2 may engage a curved surface of the heart. The bottom surface 6 may also have a separate contact layer 7 to cushion the contact between the instrument and the heart tissue and to facilitate forming a tight seal when the negative pressure is imposed. The contact layer may cover substantially the entire bottom surface 6 proximate to the openings of the suction ports 2. If the material surrounds the openings of the suction ports, it is preferable that the material not be air permeable to prevent the negative pressure from passing through the contact layer 7. Also, the contact layer 7 may be attached at the periphery of the bottom surface 6. The available materials for the contact layer 7 include the well-known and commercially available medical plastics such as TEFLON®, silicone, and others

Please amend the paragraph beginning on page 12, line 6 as follows:

(Amended) Referring to Figure 4, Figure 4 shows an embodiment of the invention in use in a coronary artery bypass graft (CABG) procedure where an anastomosis is formed between the internal mammary artery IMA 13 and the left anterior descending artery LAD 14 and which is held open by vessel retractors 16a and 16b. One end of the anastomosis is sewn to the LAD 14 by sutures 17 being manipulated by instrument 10. A vacuum line 3 is attached to inlet 5, to introduce a negative pressure to the pressure conducting chamber 4. An instrument 10, which in this example is manipulating suture 17 for sewing the anastomosis at the LAD 14, is introduced via instrument port 9a located in the housing 1 of the apparatus. An instrument port 9a has a shaft 18 disposed within the instrument port 9a to facilitate positioning the instrument 10 relative to both the housing 1 and to the surgical site. The shaft 18 traverses all or a portion of the instrument port 9a and may be flexible such that the shaft 10 can be

oriented in a fashion to direct the instrument 10 to the desired point within the surgical field. The shaft 18 may also be incorporated into a pivot 24 of any of several configurations including a ball 25 and socket 26 joint having a passage 27 running axially through the ball 25 wherein the shaft 18 is contained in the passage 27 such that the ball 25 is rotated within the

IN THE CLAIMS

Please cancel claims 1-14 without prejudice to the possibility of filing one or more continuing applications directed to the subject matter recited therein.

Please enter the following additional claims:

15. (New) An instrument adapted to fix a portion of a beating part by applying a negative pressure thereto, said instrument comprising:

a first member adapted to contact the portion of the beating heart, said first member having at least one suction port adapted to deliver the negative pressure to the portion of the beating heart, at least one suction line for connecting said at least one suction port to a source of negative pressure, and a suction aperture interconnecting each said at least one suction port with said at least one suction line, wherein each said suction aperture has a cross-sectional area substantially smaller than a cross-sectional area of said suction port with which it connects.

16. (New) The instrument of claim 15, wherein each said suction aperture interconnects with each said suction port, respectively, so as to be located off-center of said suction port.

17. (New) The instrument of claim 15, said first member having a plurality of said suction ports, each said suction port being interconnected to said at least one suction line by a respective one of said suction apertures.

18. (New) The instrument of claim 17, wherein each said suction aperture interconnects with each said suction port, respectively, so as to be located off-center of said suction port.

19. (New) The instrument of claim 17, wherein said at least one suction line consists of one suction line and each said suction aperture interconnects each said suction port, respectively, to said one suction line.

20. (New) The instrument of claim 15, further comprising:

a second member adapted to contact the portion of the beating heart, said second member having at least one suction port adapted to deliver the negative pressure to the portion of the beating heart, said at least one suction port of said second member being connected to at least one of said at least one suction line.

21. (New) The instrument of claim 20, wherein said second member further comprises a suction aperture interconnecting each said at least one suction port with said at least one suction line, wherein each said suction aperture of said second member has a cross-sectional area substantially smaller than a cross-sectional area of said suction port with which it connects.

22. (New) The instrument of claim 21, wherein each said suction aperture of said second member interconnects with each said suction port of said second member, respectively, so as to be located off-center of said respective suction port.

23. (New) The instrument of claim 21, said second member having a plurality of said suction ports, each said suction port of said second member being interconnected to said at least one suction line by a respective one of said suction apertures of said second member.

24. (New) The instrument of claim 23, wherein each said suction aperture of said second member interconnects with each said suction port of said second member, respectively, so as to be located off-center of said respective suction port.

25. (New) The instrument of claim 23, wherein said at least one suction line consists of two suction lines, each said suction aperture of said first member interconnects each said suction port of said first member, respectively, to a first one of said two suction lines, and each said suction aperture of said second member interconnects each said suction port of said second member, respectively, to a second one of said two suction lines.

26. (New) A suction member adapted to be mounted at a distal end of an instrument, said instrument adapted to fix a portion of a beating heart by applying a negative pressure through said suction member, said suction member comprising at least one elongate body having at least one suction port having a distal opening adapted to engage the surface of the beating heart and a suction aperture connected to each said suction port, and a suction conduit passing within said body and fluidly connecting with each said suction aperture, said suction conduit being in fluid communication with a vacuum line.

27. (New) The suction member of claim 26, wherein each said elongate body contains a plurality of said suction ports and a plurality of said suction apertures respectively connecting said suction ports to said suction conduit, wherein each said suction aperture has a cross-sectional area that is smaller than a cross-sectional area of said port to which it connects, wherein said cross-sectional area of said port is measured where it opens to said surface.

28. (New) The suction member of claim 27, wherein each said suction aperture interconnects with each said suction port, respectively, so as to be located off-center of said suction port.

29. (New) A suction arrangement for a surgical instrument adapted for fixation of a portion of a beating heart, said arrangement comprising:

a suction port having first and second ends, said first end being open to fluid flow therethrough, said second end connected to a suction aperture having a smaller cross-sectional area than a cross-sectional area of said first end, and a suction conduit connected to said suction aperture, said suction conduit being adapted to connect with a source of negative pressure.

30. (New) The suction arrangement of claim 29, further comprising a plurality of said suction ports and said suction apertures, each said suction port being connected with one of said suction apertures, respectively, and all of said suction apertures connecting with said suction conduit.

31. (New) The suction arrangement of claim 29, wherein said suction aperture connects with said suction port so as to be located off-center of said suction port.

32. (New) The suction arrangement of claim 30, wherein each said suction aperture connects with each said suction port, respectively, so as to be located off-center of said suction port.

No prohibited new matter is believed to have been introduced by these amendments.

This amendment is being filed with a transmittal letter/fee sheet. In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that extensions or other relief is required and/or fees are due, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge our Deposit Account No. 50-0815 for any fees due in connection with the filing of this document.

Respectfully submitted,

Date: December 14, 2001

By: [signature]
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

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preferable that the material not be air permeable to prevent the negative pressure from passing through the contact layer 7. Also, the contact layer 7 may be attached at the periphery of the bottom surface 6. The available materials for the contact layer 7 include the well-known and commercially available medical plastics such as TEFLON®, [teflon, silicon] silicone, and others

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